

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																																																										
Description Work Order Deviation				Disposition				Completed By																																																									
								Lead hand / Supervisor Approval Verification																																																									
								QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER :			
Misidentified ☐	Past Due ☐																																																																

Wednesday, April 12, 2017 3:51:03 PM

159556

Page 2

N900040100

Setup Start *NS1*

Stop ***NS2***

6

Cust Item ID:

Start Date: 4/16/2017 **Start Qty:** 6.00

6

Customer:

Required Date: 5/5/2017 **Req'd Qty:** 6.00

Reference: SCHEDULED/S

Run Start *NR1*

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop *NR2*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

**Insp.
Stamp**

QC8- Inspect parts - second check

0.00

130

QC

Memo

0.12

Quality Control

0.17

140

Small Fab

Small Fab

Memo

0.17

Small Fab

1-Deburr

2-Bend per Dwg D2741

QC5- Inspect part completeness to step on W/O

0.00

150

QC

Memo

0.12

Quality Control

DQA: _____ Date: _____



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Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

Work Order ID 159556

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159556

Page 3

Item ID: D2741-NP Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Blade (No paint)
Start Date: 4/16/2017 Start Qty: 6.00 ***6*** Cust Item ID:
Required Date: 5/5/2017 Req'd Qty: 6.00 ***6*** Customer:
Reference: SCHEDULED/S

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	Outsource process - Heat Treat	0.00							
160									
Outsource1	Memo	1,080.00							
Outsource process - Heat Treat	Issue P/O: <u>360/65</u>								
	Harden material as per Dwg D2741								
	Min. Ultimate Tensile Strength = 152 ksi (34-40 HRC)								
	Min. Yield Tensile Strength = 141 ksi								
	Test report or Certification required								
	Sand blast parts								
170	Receive & Inspect for Damage & Mat'l Certs	0.00							
170									
Packaging	Memo	0.12							
Packaging	Ensure Test report or Certification attached								

MAY 02 2017

9-89

Lex SP17-523

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY							
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	☐
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	☐
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing	☐
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	☐
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread	☐
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence	☐
Past Expiry Date	☐	Manufacturing Process	☐	OTHER : _____							
Misidentified	☐	Past Due	☐								

159556

Wednesday, April 12, 2017 3:51:04 PM

N900040100

Setup Start *NS1*

Stop *NS2*

Cust Item ID:

6

6

Customer:

Run Start *NR1*

Stop *NR2*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

**Insp.
Stamp**

0.00

Memo

0.12

C

DAS
38
9-89
MAY 24 201

0.00

Memo

0.12

2

clean with wash & wipe to remove oil

17-5-25

0.00

Memo

0.12

C

DAS
38
9-89

MAY 25 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
040 040 040								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐		Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐					
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Work Order ID 159556***159556***

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Wednesday, April 12, 2017 3:51:04 PM

Item ID: D2741-NP Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Blade (No paint)
Start Date: 4/16/2017 Start Qty: 6.00 ***6*** Cust Item ID:
Required Date: 5/5/2017 Req'd Qty: 6.00 ***6*** Customer:
Reference: SCHEDULED/S

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220	Identify as per dwg & Stock Location: <u>WA001</u>	0.00							
220						(6)		<u>DYC</u>	
Packaging	Memo	0.06						<u>17/05/25</u>	
Packaging	LOCATION WA002								
230	QC21- Final Inspection - Work Order Release	0.00							
230									
QC	Memo	0.60							
Quality Control									

DAS
21
9-89

MAY 25 2017

DQA: _____ Date: _____



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Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
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Misidentified ☐	Past Due ☐																																																																

Picklist Print

Wednesday, April 12, 2017 3:51:03 PM

Page 1

Work Order ID: 159556

159556

Parent Item: D2741-NP

D2741-NP

Parent Item Name: Blade (No paint)

Start Date: 4/16/2017

Required Date: 5/5/2017

Start Qty: 6.00

Required Qty: 6.00

Comments: IPP REV:A 14.04.08 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M4130NB0.500X03.00 0		Purchased	No			100	f	86.3333	1.154	7.288421			

M4130NB0 500X03 000

4130 Bar 0.500 x 3.00

**

17-04-19 Kf./D.e

Location

Loc Qty

Loc Code

MAT033

86.3333

m136553

35

m137285

51.3333

7.0

DQA: _____ Date: _____

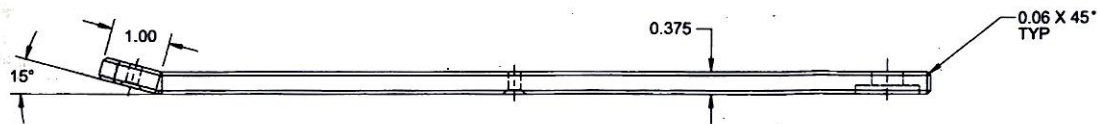


WORK ORDER NON-CONFORMANCE / UPDATE

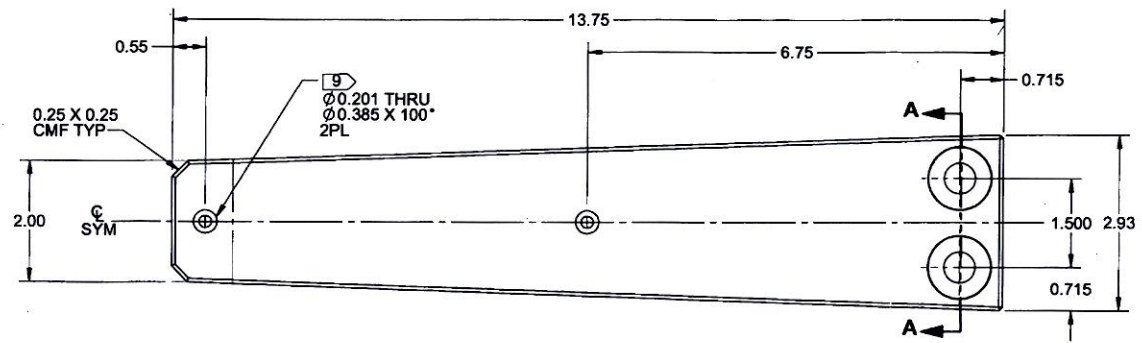
QA Closed: _____ Date: _____

Work Order update only ☐

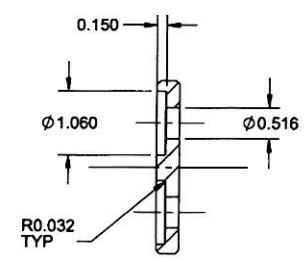
Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					



D2741 BLADE
(MAKE FROM D2741F)



D2741F FLAT PATTERN



SECTION A-A

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 159556 M.W.
1704-13

RELEASED
2014-04-06
MD

- NOTES:**
- 1) MATERIAL: AISI 4130N STEEL BAR PER MIL-S-6758 OR AMS 6345/6348/6370/6528
REF DART SPEC. M4130N-B0.500X3.000
 - 2) FINISH: D2741: POWDER COAT "WHITE" (4.3.5.2) PER DART QSI 005 4.3
D2741-NP: NO PAINT
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.030 TO 0.060 MAX
 - 6) IDENTIFICATION: WITH DART P/N "D2741" OR D2741-NP, AND B/N "BXXXXX", PER DART QSI 044 6.1 (FINE POINT PAINT MARKER)
 - 7) WEIGHT: 3.3 lbs
 - 8) HEAT TREAT TO MIN. ULTIMATE TENSILE STRENGTH = 152 ksi AND MIN. YIELD TENSILE STRENGTH = 141 ksi
PER MIL-S-6758 OR AMS2759/1E AFTER MACHINING.
ACCEPTABLE TO VERIFY TENSILE STRENGTH BY HARDNESS TEST PER ASTM E18 TO 34-40 HRC.
 - 9) OPTIONAL: ONLY REQUIRED WHEN MAKING D350-636-215/-216/-217/-218, NOT APPLICABLE ON D2741-NP.

E	ADD D2741-NP (NO PAINT) OPTION (ZN AB-1)	DB	13.08.29
D	ADD Ø0.201 HOLES AND NOTE 10 (ZN D7-1) REMOVE .041/.043 OPTIONS REFORMAT DWG. REF PAR11.72	SFM	13.02.21
C	LARGER HOLE, ADD RADIUS AND CHAMFER ADD -.041/.043 OPTIONS	PH	06.01.12
B	CHANGE C'SINK TO C'BORE	CP	98.09.01
A	NEW ISSUE	DS	98.04.16
REV.	DESCRIPTION	BY	DATE
DESIGN	DS	DART AEROSPACE USA, INC. KENT, WA	
DRAWN	DB		
CHECKED	AP	DRAWING NO.	REV. E
MFG. APPR.	AP	D2741	SHEET 1 OF 1
APPROVED	AP	TITLE	SCALE
DE APPR.	AP	BLADE	NTS
DATE	13.08.29	COPYRIGHT © 1998 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO36165

Purchase Order Date 5/2/2017
PO Print Date 5/17/2017

Page Number 1 of 2

Order From :

VC-MET004

Ship To : DART AEROSPACE LTD

METCOR INC.
560 BOUL. ARTHUR SAUVE
SAINT-EUSTACHE, QC J7R 5A8
CA

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

REVISED \$

Contact Name

Buyer

Chantal Lavoie

Vendor Phone

450 473 1884

Customer POID

Customer Tax #

10127-2607

Ship To Contact

Terms

Net 30

Ship To Phone

Currency

CAD

Ship Via:

Journey Freight collect

FOB

FCA - (Free Carrier)

Ship Acct:

E-MAILED
MAY 17 2017

Line Nbr	Reference Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
			Promise Date				
1	159556	D2741-NP BLADE	5/30/2017 Yes 5/30/2017		6.00	\$12.16	\$72.96
HARDEN MATERIAL: ULTIMATE TENSILE STRENGTH = 152 KSI MINIMUM YIELD TENSILE STENGHT = 141 KSI (34-40 HRC) SAND BLAST PART AFTER HEAT TREAT \ NOTE: DO NOT OIL AFTER SANDBLAST NOTE: DETAIL C OF C REQUIRED							
Line Total:							\$72.96
2	158915	D2741 BLADE	5/30/2017 Yes 5/30/2017		40.00	\$12.16	\$486.40
HARDEN MATERIAL: ULTIMATE TENSILE STRENGTH = 152 KSI MINIMUM YIELD TENSILE STENGHT = 141 KSI (34-40 HRC) SAND BLAST PART AFTER HEAT TREAT \ NOTE: DO NOT OIL AFTER SANDBLAST NOTE: DETAIL C OF C REQUIRED							

SP17-5-23

Note:

5/17/2017

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC J7R 5A8
Tel: 450-473-1884 / Fax: 450-491-5498

Reçu de livraison

Delivery Receipt

BON DE TRAVAIL Order	EXPÉDITEUR Shipper ID	BON D'EXPÉDITION Shipper
318923	1	119520

EXPÉDITION COMPLÈTE / Shipped Complete

CLIENT /Customer 215

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053



LIVRÉ À /Shipped To

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

COMMANDE DU CLIENT Customer PO	BON DE LIVRAISON DU CLIENT Customer Shipper No.	TYPE DE MATÉRIEL Material Type	DATE DE LA COMMANDE Order Date	TRANSPORTEUR Carrier
36165		4130	2017/5/3	MINIMAX

QUANTITÉ Quantity	No. PIÈCE Part No.	NOM DE LA PIÈCE Part Name	DESCRIPTION DE LA PIÈCE Part Description	POIDS Weight
----------------------	-----------------------	------------------------------	---	-----------------

46 D2741 161,

BLADE

(6) D2741 159556

(40) D2741 158915

+3 TESTS

1 BOITE DE BOIS

894-523

TYPE DE CONTENEUR Container Type	# DE CONTENEURS # Of Containers	COMMENTAIRES CONTENEUR Container Comments
-------------------------------------	------------------------------------	--

BOITE DE BOIS

1

certificat

EMPAQUETAGE Packing	
------------------------	--

QUANTITÉ EXPÉDIÉE / Quantity Shipped : 46

POIDS EXPÉDIÉ / Weight Shipped : 161,00

QUANTITÉ RESTANTE / Quantity Remaining : 0

POIDS RESTANT / Weight Remaining : 0,00

certificat

QUANTITÉ EXPÉDIÉE / Quantity Shipped : 46

POIDS EXPÉDIÉ / Weight Shipped : 161,00

Signature:

Date:

EXPÉDIÉ LE / Shipped On : 2017/05/16

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
318923	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K8A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K8A 1K7

1

COMMANDE DU CLIENT customer po	CLASSIFICATION PIECE part classification	MATÉRIEL material	MAÎTRE D'OEUVRE prime contractor	PROGRAM
36165	N/A	4130		

SPÉCIFICATIONS DU PROCÉDÉ processing specifications

SEL HARDEN

HARDEN AND TEMPER

SAE AMS 2759/1 REV.E

EXIGENCE / requirement	SPÉCIFICATIONS / specified	TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
HARDNESS	34 - 40 HRC	46	38 - 40 HRC
TENSILE (KSI)	152 - 182 KSI		171 - 182 KSI

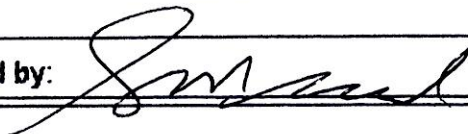
QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
46	161	D2741 BLADE (6) D2741 159556 (40) D2741 158915 +3 TESTS 1 BOITE DE BOIS

SP-7-5-23

16 mm

COMMENTAIRES / comments

APPROUVÉ par / Approved by:



DATE: 2017-05-16

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Détail

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
318923	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

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COMMANDE DU CLIENT customer po	CLASSIFICATION PIECE part classification	MATÉRIEL material	MAÎTRE D'OEUVRE prime contractor	PROGRAM
36165	N/A	4130		
SPÉCIFICATIONS DU PROCÉDÉ processing specifications				
SEL HARDEN HARDEN AND TEMPER SAE AMS 2759/1 REV.E				
EXIGENCE / requirement	SPÉCIFICATIONS / specified		TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
HARDNESS	34 - 40 HRC		46	38 - 40 HRC
TENSILE	152 - 182 KSI		1	165.1 - 165.1 KSI
TENSILE	152 - 182 KSI		metcor report# 3610	171 - 182 KSI
QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description		
46	161	D2741 BLADE (6) D2741 159556 (40) D2741 158915 +3 TESTS 1 BOITE DE BOIS		

COMMENTAIRES / comments

SALT HARDEN 1575F, 40 MIN

TEMPER 875F, 4 HRS

Heat treatment (HT) was performed with equipment that meets the requirements of AMS2759 & AMS2750. All HT operations were in compliance with AMS2759 and all verifications have been performed and documented. No unauthorized changes were performed in regards to the HT. We certify that the material was manufactured, sampled, tested and inspected in accordance with AMS2759 and the purchase order and was found to meet the requirements. This document and any attached documents may contain confidential or proprietary information and may be subject to export control laws and regulations. If you are not the intended recipient, you are notified that any dissemination, copying of this e-mail and any attachments thereto or use of their contents by any means whatsoever is strictly prohibited. Unauthorized export or re-export is prohibited.

Le traitement thermique (TT) a été fait en utilisant des équipements en conformité avec AMS2759 et AMS 2750.

Le TT a été fait tel que requis par AMS2759 et toutes les vérifications et les tests demandés ont été faites et documentés. Aucun changement n'a été faite par rapport au TT. On certifie que le matériel a été fabriqué, échantillonné, testé et inspecté en accord avec AMS2759 et le bon de commande et le matériel rencontre les exigences spécifiées.

Ce document et les documents qui lui sont joints peuvent contenir des informations confidentielles, être soumis aux réglementations relatives au contrôle des exportations ou ayant un caractère privé. S'ils ne vous sont pas destinés, nous

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

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Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Détail

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
318923	1

CLIENT / customer 215

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ON K6A 1K7

LIVRÉ À / shipped to:

1

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

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APPROUVÉ par / Approved by:

Isabel Otero

Isabel Otero
QA Technician



DATE: 2017-05-18



May 18, 2017

ASTM E8 / 0.2% OFFSET YIELD / 1" GL.(4d)

Report No. 3610

Test Date 18-May-17 Testing Machine STM-20K 0812557

Client Dart Aerospace
Operator Vincent Bonami
Material 4130

PO 36165
W.O. 318923

Part # D2741

Load Cell S/N (TVI110012), Units (LBS)

22480

Crosshead Speed (Inches / min) or Rate

0.5

Displacement Sensor

EZ.1-1 (5286)

Notes Results are in compliance with customer and specification requirements.

Test No	Specimen ID	Diameter (in)	Yield (kpsi)	Tensile (kpsi)	Total Elong (%)	RA (%)
8382	318923-1	0.249	154.4	165.1	16.5	60.2
	Mean	0.249	154.4	165.1	16.5	60.2
	Std Dev					
	Specification (min)			152.0		
	(max)			182.0		

By:  Date: May 18, 2017



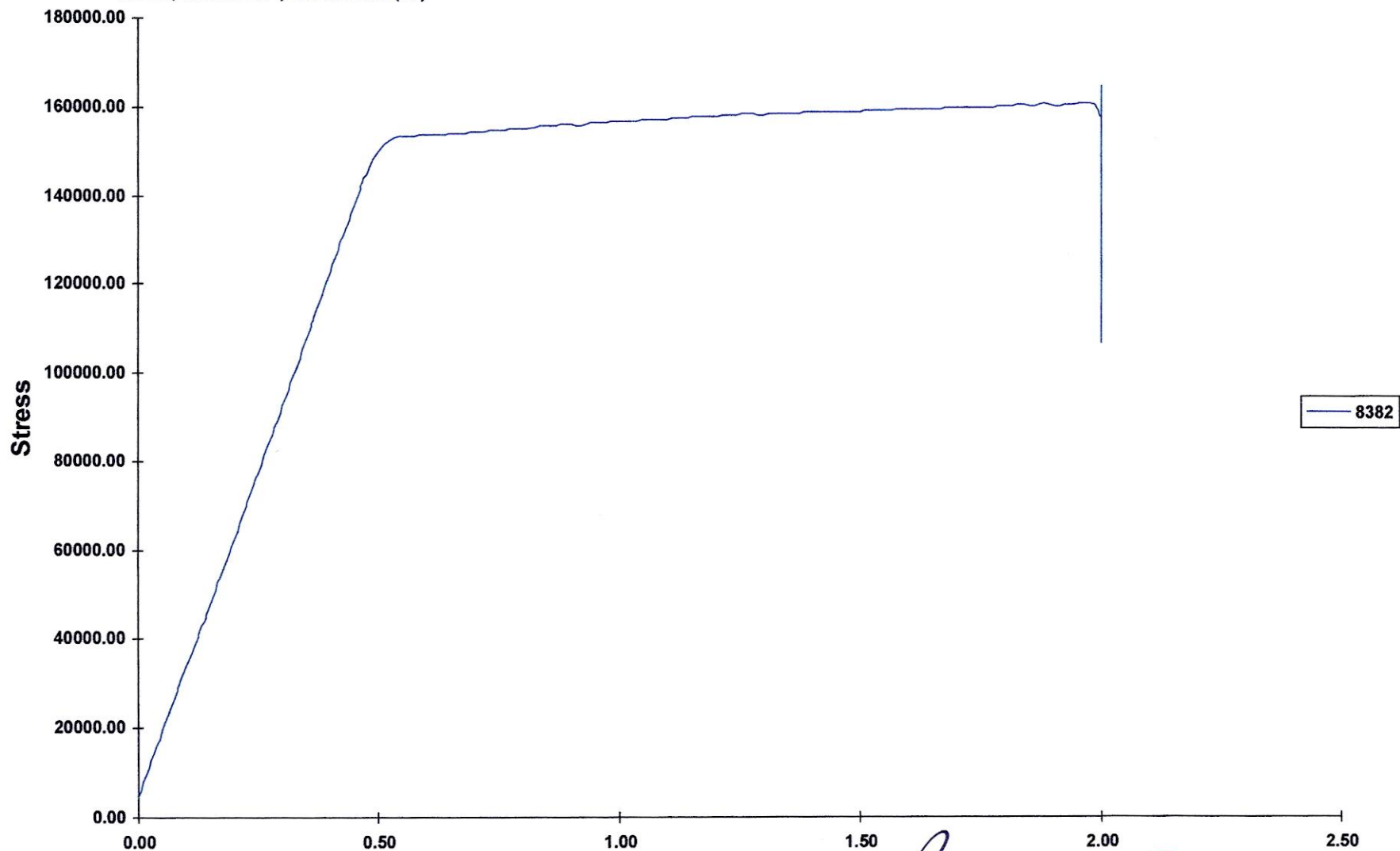
Test Performed in Accordance with ASTM E 8, Rev. 13



Report No 3610

ASTM E8 / 0.2% OFFSET YIELD / 1" GL.(4d)

Stress (Lbs / Inches ²) vs Extension (%)



Extension

By :

V Bonanni

